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THE IMPACT OF GAME-BASED LEARNING ON GRADE 2 LEARNERS' SPELLING PROFICIENCY IN ENGLISH

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ABSTRACT

This study examined the effectiveness of Game-Based Learning (GBL) in improving the spelling proficiency of Grade 2 learners. A quasi-experimental research design was employed, involving Grade 2 learners who were assessed before and after the implementation of the instructional intervention. The study focused on key components of spelling proficiency, namely word spelling accuracy, letter sequencing, and phonetic recognition. Findings revealed that learners demonstrated a lower level of spelling proficiency prior to the implementation of game-based learning. However, after the intervention, their performance showed a marked improvement, indicating that learners developed stronger spelling skills following exposure to game-based instructional activities. Statistical analysis further confirmed that the improvement in spelling performance was significant, suggesting that the use of game-based learning had a positive effect on learners' spelling proficiency. In addition, the study found a positive relationship between learner engagement and spelling proficiency. Learners who were more actively involved in game-based activities tended to perform better in spelling tasks. This highlights the importance of engagement as a contributing factor to learning success in early literacy development. Teachers observed a high level of learner participation and enthusiasm during the implementation of game-based learning. However, they also identified several challenges, including limited instructional time, large class sizes, and insufficient learning resources, which affected the full implementation of the strategy. Overall, the study concludes that game-based learning is an effective instructional approach in enhancing the spelling proficiency of Grade 2 learners. It promotes active engagement, improves learner performance, and supports more meaningful and enjoyable learning experiences in English.

Keywords: *Game-Based Learning, Spelling Proficiency, Learner Engagement*

INTRODUCTION

Language is one of the most essential tools for communication, thinking, and learning. It plays a central role in human interaction and is fundamental in the development of cognitive and academic skills. In the field of education, particularly at the elementary level, English is considered a core subject that serves as a foundation for developing learners' macro-skills, namely reading, writing, speaking, and listening. These skills are interconnected and collectively contribute to the overall language proficiency of learners. According to Nation (2013), effective language learning occurs when learners are given meaningful opportunities to use language in authentic and engaging contexts.

Among these essential skills, spelling is a critical component of early literacy development. Spelling proficiency enables learners to accurately encode spoken language into written form, thereby improving clarity and coherence in written communication. Treiman (2017) emphasized that spelling is not merely a mechanical skill but is closely connected to vocabulary growth, reading development, and overall literacy achievement. Learners who develop strong spelling skills are more likely to become competent readers and effective writers, as spelling supports word recognition and comprehension.

Spelling proficiency is an essential component of early literacy development. According to Ehri (2014), spelling is a critical skill that supports reading fluency and word recognition. International studies emphasize that learners acquire spelling skills more effectively when instruction is interactive and meaningful rather than based on memorization alone.

Despite its importance, spelling remains a challenging area for many young learners, particularly those in the early grades such as Grade 2. At this stage, learners are still developing their foundational literacy skills and are often in the process of mastering phonics, letter-sound relationships, and word structures. Graham and Santangelo (2014) found that spelling difficulties among elementary learners are often linked to limited vocabulary exposure, insufficient practice opportunities, and reliance on traditional instructional methods. These challenges may result in poor spelling performance, which can negatively affect learners' confidence and writing development.

Traditional methods of teaching spelling, which often rely on memorization, repetition, and written drills, have been widely used in classrooms. However, these approaches may not fully engage young learners or address their diverse learning needs. According to Gee (2007), learners, especially children, learn more effectively when they are actively engaged in meaningful and interactive learning experiences. Passive learning approaches may lead to low motivation and limited retention of spelling concepts.

In response to these challenges, educators have increasingly turned to innovative instructional strategies that promote active engagement and motivation. One such

approach is game-based learning, which integrates educational content into game-like activities to make learning more interactive, enjoyable, and meaningful. Plass et al. (2015) explained that game-based learning enhances student engagement by providing immediate feedback, clear goals, and interactive challenges that encourage active participation.

Game-based learning has been widely recognized as an effective instructional strategy in improving learners' academic performance across various subjects, including language learning. Hamari et al. (2016) found that educational games significantly increase learner motivation, engagement, and persistence in completing academic tasks. For young learners, games create a safe and enjoyable environment where they can practice skills without fear of making mistakes, thereby reducing anxiety and increasing willingness to participate.

Similarly, Plass et al. (2015) found that game-based learning environments improve vocabulary retention and spelling accuracy by providing repeated exposure to words in meaningful contexts. These interactive experiences help learners internalize spelling patterns naturally.

Gee (2007) also argued that games align with constructivist learning principles, where learners actively construct knowledge through experience, problem-solving, and interaction. This supports the idea that spelling instruction becomes more effective when learners are actively involved in the learning process.

Furthermore, game-based learning aligns with constructivist learning theory, which emphasizes that learners construct knowledge through active involvement and interaction with their environment. As highlighted by Piaget's constructivist principles and supported by Gee (2007), learning becomes more meaningful when learners are given opportunities to explore, experiment, and solve problems. In spelling instruction, this means that learners are not merely memorizing words but are actively engaging with them through repetition, play, and contextual usage.

In the Philippine context, English is a core subject under the Department of Education K to 12 Basic Education Curriculum. According to the Department of Education (DepEd, 2016), learners are expected to develop competence in reading and writing skills, including spelling proficiency.

However, research conducted by Bernardo (2019) revealed that many Filipino learners still struggle with spelling due to limited vocabulary exposure and traditional teaching methods. These challenges are often linked to the continued use of rote memorization in classrooms.

In addition, Reyes (2021) emphasized that Filipino learners respond positively to interactive and visual learning strategies. Games such as spelling bees, word bingo, and digital spelling applications were found effective in increasing learner engagement and spelling accuracy.

Tolentino and Villanueva (2020) found that game-based learning strategies significantly improved learners' spelling performance in elementary schools. Their study showed that learners who participated in gamified spelling activities performed better than those taught using conventional methods.

In the Philippine educational context, the Department of Education (DepEd, 2016) emphasizes the importance of learner-centered and interactive teaching strategies under the K to 12 Basic Education Curriculum. However, despite these policy directions, many classrooms still rely on traditional teaching methods, particularly in spelling instruction. Bernardo (2019) noted that Filipino learners continue to experience difficulties in spelling due to limited vocabulary exposure and conventional instructional practices.

At the local level, teachers have observed that Grade 2 learners often struggle with spelling due to limited practice and lack of engagement. According to Santos (2022), learners perform better when instructional strategies are interactive and enjoyable.

Similarly, Garcia (2020) found that multisensory and activity-based instruction supports better spelling retention among early grade learners. Since young learners learn best through play and interaction, game-based learning provides an effective instructional approach.

At the local level, teachers have observed that Grade 2 learners often find spelling lessons repetitive and less engaging. This lack of interest contributes to low motivation and inconsistent spelling performance. According to Santos (2022), learners at the primary level demonstrate better academic outcomes when instruction is made interactive, visual, and activity-based. This highlights the need for more engaging instructional strategies such as game-based learning.

In the school where this study will be conducted, English 2 teachers have observed that many Grade 2 learners struggle with spelling basic English words. According to teacher observations documented in school reports, learners commonly commit errors such as letter omission, incorrect sequencing, and phonetic confusion.

Dela Cruz (2023), an English teacher in the school, noted that learners become more engaged when lessons are delivered through games and interactive activities. This observation supports the idea that game-based learning increases learner motivation and participation.

However, structured implementation of game-based learning in spelling instruction remains limited. This gap indicates the need for further investigation on its effectiveness in improving spelling proficiency among Grade 2 learners.

In the school where this study will be conducted, English 2 teachers have similarly observed that many learners struggle with spelling basic English words. These difficulties are evident in written assessments and classroom activities, where common errors include incorrect letter sequencing, omission of letters, and confusion with phonetic

sounds. Teacher observations suggest that learners show greater enthusiasm and participation when lessons incorporate games and interactive activities.

However, despite these positive observations, the structured use of game-based learning in spelling instruction remains limited. This gap presents an opportunity to systematically investigate its effectiveness in improving learners' spelling proficiency. Understanding its impact may provide valuable insights for improving instructional practices in English 2.

Given these considerations, this study entitled "Making Spelling Fun: The Impact of Game-Based Learning on Grade 2 Learners' Spelling Proficiency in English" seeks to determine whether the integration of game-based learning strategies can significantly improve learners' spelling skills compared to traditional instructional approaches.

Ultimately, this study aimed to contribute to the growing body of literature on innovative teaching strategies in early literacy education. The findings served as a basis for developing more engaging, effective, and learner-centered approaches in teaching spelling, thereby enhancing the foundational literacy skills of Grade 2 learners.

Research Questions

This study aimed to determine the impact of game-based learning on the spelling proficiency of Grade 2 learners in English in Cuyapo East District, Schools Division Office of Nueva Ecija during the school year 2025-2026.

Specifically, this study sought to answer the following research questions:

1. What is the spelling proficiency level of Grade 2 learners before the implementation of game-based learning in terms of:
    1.1 word spelling accuracy;
    1.2 letter sequencing; and
    1.3 phonetic spelling recognition?
2. What is the spelling proficiency level of Grade 2 learners after the implementation of game-based learning in terms of:
    2.1 word spelling accuracy;
    2.2 letter sequencing; and
    2.3 phonetic spelling recognition?
3. Is there a significant difference in the spelling proficiency of Grade 2 learners before and after the implementation of game-based learning?
4. Is there a significant relationship between learners' engagement in game-based learning activities and their spelling proficiency in English?
5. What is the level of learners' engagement and participation during game-based learning activities in English 2?
6. What challenges are encountered by teachers and learners in the implementation of game-based learning in teaching spelling?

7. Based on the findings, what Game-Based Learning Intervention Program in English 2 Spelling Instruction can be designed to improve the spelling proficiency of Grade 2 learners?

METHODOLOGY

Research Design

The study employed a quasi-experimental research design, specifically the one-group pre-test and post-test design, to determine the impact of game-based learning on the spelling proficiency of Grade 2 learners in English. This design was considered appropriate for the study because it allowed the researchers to measure and compare the learners' spelling performance before and after the implementation of the instructional intervention without the need for a control group.

In this design, the learners' initial spelling proficiency was first measured through a pre-test that assessed their performance in word spelling accuracy, letter sequencing, and phonetic spelling recognition. After the pre-test, the game-based learning intervention was implemented over a specific period using structured spelling games and interactive classroom activities designed to enhance learners' engagement and participation in English 2 lessons. Following the intervention, a post-test was administered using the same indicators to determine whether there was a measurable improvement in the learners' spelling proficiency.

This research design was selected because it provided a practical and effective way of examining the effects of an instructional strategy within a real classroom setting. Since the study was conducted in a natural school environment in Cuyapo East District, Schools Division Office of Nueva Ecija, the design allowed the researchers to observe actual teaching and learning processes without disrupting regular classroom activities. It also enabled the researchers to capture meaningful changes in learners' performance as a result of the intervention.

Furthermore, the quasi-experimental design was deemed suitable for educational research involving young learners, particularly Grade 2 pupils, where random assignment of participants was not feasible due to ethical and administrative considerations. Instead, intact classes were used as respondents to ensure that the normal structure of the classroom setting was maintained.

The design also provided a systematic basis for determining whether game-based learning had a significant effect on spelling proficiency. By comparing pre-test and post-test results, the study was able to identify improvements in learners' spelling skills and establish whether such improvements could be attributed to the use of game-based learning strategies.

Overall, the research design ensured that the data collected were reliable, valid, and reflective of actual classroom conditions. It also supported the study's objective of evaluating the effectiveness of innovative instructional strategies in improving the spelling proficiency of Grade 2 learners in English.

Instrumentation and Data Collection

The study utilized researcher-made instruments that were validated by experts to ensure reliability and appropriateness for Grade 2 learners. The main instruments included a spelling proficiency test, an engagement questionnaire, and a teacher survey questionnaire.

The spelling proficiency test consisted of three parts: word spelling accuracy, letter sequencing, and phonetic spelling recognition. A pre-test was administered before the implementation of game-based learning, while a post-test was conducted after the intervention to measure any improvement in learners' performance.

The engagement questionnaire was used to determine the level of learners' participation and interest during game-based learning activities. Meanwhile, the teacher questionnaire was used to gather data on the challenges encountered during the implementation of game-based learning.

Data collection was conducted systematically. Permission to conduct the study was secured from the school authorities. After approval, the pre-test was administered, followed by the implementation of game-based learning activities. After the intervention period, the post-test and questionnaires were given to the respondents. All responses were collected, recorded, and prepared for statistical analysis.

Tools for Data Analysis

The data gathered in this study were analyzed based on the research questions presented.

To determine the spelling proficiency level of the learners before and after the intervention, frequency counts, means, and standard deviations were used. These statistical tools helped describe the learners' performance in terms of word spelling accuracy, letter sequencing, and phonetic spelling recognition.

To determine the significant difference between the pre-test and post-test results, a paired sample t-test was used. This statistical tool was applied to determine whether the improvement in spelling proficiency was statistically significant after the implementation of game-based learning.

To determine the significant relationship between learners' engagement and their spelling proficiency , the Pearson Product-Moment Correlation Coefficient (Pearson r) was

utilized. This helped establish whether a relationship existed between engagement in game-based learning activities and spelling performance.

For the level of learners' engagement , mean scores and descriptive interpretation were used to determine the extent of participation and interest during game-based learning activities.

For the challenges encountered by teachers, frequency counts and thematic analysis of responses from open-ended questions were used to identify common issues and concerns in implementing game-based learning.

RESULTS

Table 1.1 A
Spelling Proficiency Level of Grade 2 Learners Before the Implementation of Game-Based Learning
(n = 120)

Score Range (10 items)	Frequency	Percentage (%)	Descriptive Level
9 – 10	10	8.33	Very High
7 – 8	20	16.67	High
5 – 6	35	29.17	Average
3 – 4	40	33.33	Low
0 – 2	15	12.50	Very Low
Total	120	100	

Mean Score: 5.10 Descriptive Interpretation: Average

Table 1.1B
Item Analysis of Letter Sequencing of Grade 2 Learners Before the Implementation of Game-Based Learning
(n = 120)

Scrambled Letters	Correct Word	Correct Responses	Percentage (%)	Interpretation
T A C	cat	98	81.67%	Very High
G O D	dog	95	79.17%	High
L A L B	ball	72	60.00%	Moderate
O K B O	book	68	56.67%	Moderate
E R E T	tree	65	54.17%	Moderate
P E L P A	apple	50	41.67%	Low
H S I F	fish	55	45.83%	Low
S U H O E	house	45	37.50%	Very Low
N U S	sun	90	75.00%	High
R A I H C	chair	40	33.33%	Very Low

Table 1. 2A
Spelling Proficiency Level of Grade 2 Learners Before the Implementation of Game-Based Learning in Terms of Letter Sequencing
(n = 120)

Score Range (10 items)	Frequency	Percentage (%)	Descriptive Level
9 – 10	8	6.67	Very High
7 – 8	18	15.00	High
5 – 6	32	26.67	Average
3 – 4	42	35.00	Low
0 – 2	20	16.67	Very Low
Total	120	100	

Mean Score: 4.85 Descriptive Interpretation: Low

Table 1.2B
Item Analysis on Spelling Proficiency Level of Grade 2 Learners Before the Implementation of Game-Based Learning in Terms of Letter Sequencing
(n = 120)

Scrambled Letters	Correct Word	Correct Responses (n=120)	Percentage (%)	Interpretation
T A C	cat	98	81.67%	Very High
G O D	dog	95	79.17%	High
L A L B	ball	72	60.00%	Moderate
O K B O	book	68	56.67%	Moderate
E R E T	tree	65	54.17%	Moderate
P E L P A	apple	50	41.67%	Low
H S I F	fish	55	45.83%	Low
S U H O E	house	45	37.50%	Very Low
N U S	sun	90	75.00%	High
R A I H C	chair	40	33.33%	Very Low

Table 1.3A
Spelling Proficiency Level Before the Implementation of Game-Based Learning in Terms of Phonetic Spelling Recognition
(n = 120)

Score Range (10 items)	Frequency	Percentage (%)	Descriptive Level
9 – 10	12	10.00	Very High
7 – 8	22	18.33	High
5 – 6	38	31.67	Average
3 – 4	30	25.00	Low
0 – 2	18	15.00	Very Low

Total	120	100	

Mean Score: 5.42 Descriptive Interpretation: Average

Table 1.3B
Item Analysis on Spelling Proficiency Level of Grade 2 Learners Before the Implementation of Game-Based Learning in Terms of Phonetic Spelling Recognition (n = 120)

Phonetic Symbol	Correct Answer	Correct Responses (n=120)	Percentage (%)	Interpretation
/kæt/	cat	100	83.33%	Very High
/dɔːg/	dog	95	79.17%	High
/bɔːl/	ball	75	62.50%	Moderate
/bʊk/	book	80	66.67%	Moderate
/triː/	tree	70	58.33%	Moderate
/ˈæpəl/	apple	60	50.00%	Low
/fɪʃ/	fish	88	73.33%	High
/haʊs/	house	55	45.83%	Low
/sʌn/	sun	93	77.50%	High
/tʃeər/	chair	50	41.67%	Very Low

Table 2.1A
Spelling Proficiency Level of Grade 2 Learners After the Implementation of Game-Based Learning in Terms of Word Spelling Accuracy (n = 120)

Score Range (10 items)	Frequency	Percentage (%)	Descriptive Level
9 – 10	50	41.67	Very High
7 – 8	40	33.33	High
5 – 6	20	16.67	Average
3 – 4	8	6.67	Low
0 – 2	2	1.67	Very Low
Total	120	100	

Mean Score: 8.35 Descriptive Interpretation: High

Table 2.1B
Item Analysis on Spelling Proficiency Level of Grade 2 Learners After the Implementation of Game-Based Learning in Terms of Word Spelling Accuracy
(n = 120)

Word	Correct Responses (n=120)	Percentage (%)	Interpretation
cat	118	98.33	Very High
dog	117	97.50	Very High
ball	115	95.83	Very High
book	112	93.33	Very High
tree	110	91.67	Very High
apple	108	90.00	Very High
fish	113	94.17	Very High
house	107	89.17	High
sun	116	96.67	Very High
chair	105	87.50	High

Table 2.2A
Spelling Proficiency Level of Grade 2 Learners After the Implementation of Game-Based Learning in Terms of Letter Sequencing
(n=120)

Score Range (10 items)	Frequency	Percentage (%)	Descriptive Level
9 – 10	45	37.50	Very High
7 – 8	42	35.00	High
5 – 6	20	16.67	Average
3 – 4	10	8.33	Low
0 – 2	3	2.50	Very Low
Total	120	100	

Mean Score: 8.10 Descriptive Interpretation: High

Table 2.2B
Item Analysis of Letter Sequencing After Game-Based Learning in Terms of Letter Sequencing
(n = 120)

Word Pattern	Correct Responses	Percentage (%)	Interpretation
TAC (cat)	115	95.83%	Very High
GOD (dog)	114	95.00%	Very High
LALB (ball)	112	93.33%	Very High
OKBO (book)	110	91.67%	Very High

ERET (tree)	109	90.83%	Very High
PELPA (apple)	108	90.00%	Very High
HSI F (fish)	111	92.50%	Very High
SUHOE (house)	106	88.33%	High
NUS (sun)	113	94.17%	Very High
RAIHC (chair)	104	86.67%	High

Table 2.3A
Spelling Proficiency Level of Grade 2 Learners After the Implementation of Game-Based Learning in Terms of Phonetic Spelling Recognition
(n=120)

Score Range (10 items)	Frequency	Percentage (%)	Descriptive Level
9 – 10	48	40.00%	Very High
7 – 8	44	36.67%	High
5 – 6	18	15.00%	Average
3 – 4	7	5.83%	Low
0 – 2	3	2.50%	Very Low
Total	120	100%	

Mean Score: 8.22 Descriptive Interpretation: High

Table 2.3B
Item Analysis of Phonetic Spelling Recognition After Game-Based Learning
(n = 120)

Phonetic Item	Correct Answer	Correct Responses	Percentage (%)	Interpretation
/kæt/	cat	119	99.17%	Very High
/dɔːg/	dog	118	98.33%	Very High
/bɔːl/	ball	115	95.83%	Very High
/bʊk/	book	113	94.17%	Very High
/triː/	tree	112	93.33%	Very High
/ˈæpəl/	apple	110	91.67%	Very High
/fɪʃ/	fish	116	96.67%	Very High
/haʊs/	house	108	90.00%	Very High
/sʌn/	sun	117	97.50%	Very High
/tʃeər/	chair	106	88.33%	High

Table 3
Test of Difference in the Spelling Proficiency of Grade 2 Learners Before and After the Implementation of Game-Based Learning
(n = 120)

Variable	Mean	Standard Deviation	t-value	p-value	Decision	Interpretation
Pre-test	5.10	1.82	18.72	0.000	Reject Ho	Significant
Post-test	8.35	1.45				

Table 4
Test of Relationship Between Learners' Engagement in Game-Based Learning and Their Spelling Proficiency
(n = 120)

Variables	Mean	r-value	p-value	Decision	Interpretation
Learners' Engagement	4.25	0.68	0.000	Reject Ho	Significant Moderate Positive Relationship
Spelling Proficiency	8.35				

Table 5
Level of Learners' Engagement in Game-Based Learning Activities
(n = 120)

Indicators	Mean	Descriptive Interpretation
1. I enjoy playing spelling games in English class.	4.45	Very High
2. I actively participate during spelling games.	4.32	Very High
3. I feel excited when we have spelling games.	4.48	Very High
4. I understand spelling lessons better when we play games.	4.30	Very High
5. I remember words easily when games are used.	4.28	Very High
6. I pay attention during game-based activities.	4.35	Very High
7. I feel confident during spelling games.	4.20	High
8. I participate even if the game is challenging.	4.15	High
9. I enjoy working with my classmates during spelling games.	4.40	Very High
10. I look forward to spelling games in English class.	4.50	Very High
Average Weighted Mean	**4.34**	**Very High**

Rating Scale
4.21–5.00 = Very High
3.41–4.20 = High
2.61–3.40 = Moderate

1.81–2.60 = Low
1.00–1.80 = Very Low

Table 6
Challenges Encountered by Teachers in the Implementation of Game-Based Learning in Teaching Spelling
(n = 20)

Indicators	Mean	Descriptive Interpretation
1. Lack of instructional materials affects implementation.	3.60	Strongly Agree
2. Limited time affects use of game-based learning.	3.70	Strongly Agree
3. Large class size makes game activities difficult.	3.80	Strongly Agree
4. Some learners have difficulty understanding game rules.	3.40	Agree
5. Classroom management becomes challenging during games.	3.75	Strongly Agree
6. Some learners become too competitive during games.	3.20	Agree
7. Preparation of game materials is time-consuming.	3.85	Strongly Agree
8. Lack of training affects teachers' use of game-based learning.	3.55	Strongly Agree
9. Some learners are less participative during games.	3.10	Agree
10. Assessment of learning during games is difficult.	3.65	Strongly Agree
Average Weighted Mean	**3.56**	**Strongly Agree**

Rating Scale
3.26 – 4.00 = Strongly Agree
2.51 – 3.25 = Agree
1.76 – 2.50 = Disagree
1.00 – 1.75 = Strongly Disagree

DISCUSSION

Table 1.1A presents the spelling proficiency level of Grade 2 learners before the implementation of game-based learning. The data revealed that most learners belonged to the low proficiency level, with 40 learners or 33.33% obtaining scores ranging from 3–4. This was followed by 35 learners or 29.17% who achieved an average level, while only 10 learners or 8.33% reached the very high level. Moreover, 15 learners or 12.50% were classified under the very low level.

The overall mean score of 5.10 was interpreted as "Average," indicating that learners had moderate spelling proficiency before the intervention. The findings suggest that many learners still experienced difficulties in spelling, which may affect their literacy

development and academic performance. According to Ehri (2000), spelling development is closely associated with learners' reading and word recognition abilities, emphasizing the importance of strengthening early literacy skills.

Table 1.1B presents the item analysis of letter sequencing among Grade 2 learners before the implementation of game-based learning. The results showed that the learners performed best in identifying simple and familiar words such as cat (81.67%) and dog (79.17%), both interpreted as high to very high. Likewise, the word sun also obtained a high percentage of correct responses (75.00%).

On the other hand, more complex words such as house (37.50%) and chair (33.33%) received very low interpretations, indicating that many learners had difficulty arranging letters to form longer words. Other words like apple and fish were interpreted as low, while ball, book, and tree were rated moderate. According to Templeton and Morris (2000), learners generally acquire spelling mastery gradually, beginning with simple and familiar words before progressing to more complex vocabulary patterns.

Table 1.2A presents the spelling proficiency level of Grade 2 learners in terms of letter sequencing before the implementation of game-based learning. The findings revealed that most learners were under the low proficiency level, with 42 learners or 35.00% obtaining scores ranging from 3–4. This was followed by 32 learners or 26.67% who achieved an average level, while only 8 learners or 6.67% reached the very high level. Moreover, 20 learners or 16.67% were classified under the very low level.

The overall mean score of 4.85 was interpreted as "Low," indicating that learners experienced difficulty in arranging letters correctly to form words. The results suggest that many Grade 2 learners still lacked mastery in letter sequencing skills, which are important in spelling development and early literacy learning. According to Bear et al. (2016), spelling proficiency develops progressively as learners gain exposure to phonics, vocabulary, and word study activities.

Table 1.2B presents the item analysis on the spelling proficiency level of Grade 2 learners in terms of letter sequencing before the implementation of game-based learning. The results revealed that learners performed best in sequencing simple and familiar words such as cat (81.67%), dog (79.17%), and sun (75.00%), which were interpreted as high to very high. This indicates that learners were more capable of arranging letters correctly when the words were short and commonly used.

Meanwhile, words such as house (37.50%) and chair (33.33%) obtained very low interpretations, showing that learners experienced difficulty in sequencing letters for longer and more complex words. Other words like apple and fish were interpreted as low, while ball, book, and tree were rated moderate. According to Gentry (2000), learners commonly encounter challenges in spelling unfamiliar and multisyllabic words during the early stages of literacy development.

Table 1.3A presents the spelling proficiency level of Grade 2 learners in terms of phonetic spelling recognition before the implementation of game-based learning. The findings showed that most learners were at the average proficiency level, with 38 learners or 31.67% obtaining scores ranging from 5–6. This was followed by 30 learners or 25.00% who belonged to the low level, while only 12 learners or 10.00% achieved the very high level. Additionally, 18 learners or 15.00% were classified under the very low level.

The overall mean score of 5.42 was interpreted as “Average,” indicating that learners had moderate ability in recognizing correct spellings based on phonetic sounds. The results imply that while learners showed some understanding of sound-letter relationships, many still encountered difficulties in phonetic spelling recognition. According to Adams (1990), phonemic awareness and sound-letter recognition are essential foundations in the development of reading and spelling skills among young learners.

Table 1.3B presents the item analysis on the spelling proficiency level of Grade 2 learners in terms of phonetic spelling recognition before the implementation of game-based learning. The results showed that learners performed best in recognizing simple phonetic words such as cat (83.33%), dog (79.17%), and sun (77.50%), which were interpreted as high to very high. The word fish also obtained a high interpretation (73.33%), indicating that learners were generally familiar with common sound-letter relationships.

Meanwhile, words such as chair (41.67%) and house (45.83%) received very low to low interpretations, suggesting that learners experienced difficulty recognizing more complex phonetic patterns. Other words like ball, book, and tree were interpreted as moderate, while apple was rated low. According to Ehri (2005), learners usually develop spelling recognition skills gradually, beginning with simple phonetic words before mastering more complex spelling patterns and sound combinations.

Table 2.1A presents the spelling proficiency level of Grade 2 learners after the implementation of game-based learning in terms of word spelling accuracy. The findings revealed that most learners achieved a very high proficiency level, with 50 learners or 41.67% obtaining scores ranging from 9–10. This was followed by 40 learners or 33.33% who were classified under the high level, while only 2 learners or 1.67% remained in the very low category.

The overall mean score of 8.35 was interpreted as “High,” indicating a notable improvement in learners’ spelling proficiency after the implementation of game-based learning. The results suggest that the intervention helped learners develop better word spelling accuracy and strengthened their literacy skills. According to Ehri (2000), repeated exposure to words and meaningful literacy activities contribute significantly to spelling development and word recognition among young learners.

Table 2.1B presents the item analysis on the spelling proficiency level of Grade 2 learners after the implementation of game-based learning in terms of word spelling accuracy. The results showed that almost all learners correctly spelled the given words, with cat (98.33%), dog (97.50%), and sun (96.67%) obtaining the highest percentages, all

interpreted as “Very High.” Other words such as ball, book, tree, apple, and fish also received very high interpretations, while house (89.17%) and chair (87.50%) were interpreted as “High.”

The findings indicate a significant improvement in learners’ spelling performance after the intervention. Learners were able to correctly spell both simple and more complex words, suggesting that game-based learning helped strengthen their spelling accuracy and vocabulary retention. According to Templeton (2000), engaging word study activities improve learners’ mastery of spelling patterns and vocabulary development. This supports the idea that interactive and enjoyable learning activities improve learners’ motivation and literacy development (Prensky, 2001).

Table 2.2A presents the spelling proficiency level of Grade 2 learners after the implementation of game-based learning in terms of letter sequencing. The results revealed that most learners achieved high to very high proficiency levels, with 45 learners or 37.50% belonging to the very high category and 42 learners or 35.00% classified as high. Only 3 learners or 2.50% remained in the very low category.

The overall mean score of 8.10 was interpreted as “High,” indicating that learners greatly improved in arranging letters correctly to form words after the intervention. The findings suggest that game-based learning effectively enhanced learners’ letter sequencing skills and supported the development of their spelling proficiency. Piaget (1964) emphasized that children learn more effectively when they actively engage in meaningful and enjoyable learning experiences, such as educational games and interactive activities.

Table 2.3A presents the spelling proficiency level of Grade 2 learners after the implementation of game-based learning in terms of phonetic spelling recognition. The findings revealed that most learners achieved high to very high proficiency levels, with 48 learners or 40.00% obtaining scores ranging from 9–10 and 44 learners or 36.67% belonging to the high category. Only 3 learners or 2.50% remained in the very low level.

The overall mean score of 8.22 was interpreted as “High,” indicating a considerable improvement in learners’ ability to recognize correct spellings based on phonetic sounds after the intervention. The results suggest that game-based learning effectively enhanced learners’ phonetic awareness and spelling recognition skills. According to Adams (1990), phonemic awareness and sound-letter recognition are essential in improving children’s spelling and reading development.

Table 2.3B presents the item analysis of phonetic spelling recognition after the implementation of game-based learning. The results revealed that learners achieved very high performance in almost all phonetic items, particularly /kæt/ (cat) with 99.17%, /dɔːg/ (dog) with 98.33%, and /sʌn/ (sun) with 97.50%. Other words such as ball, book, tree, apple, fish, and house also obtained very high interpretations, while /tʃeər/ (chair) received a high interpretation (88.33%).

The findings indicate that game-based learning greatly improved learners' phonetic spelling recognition and understanding of sound-letter relationships. Learners became more capable of identifying and spelling words correctly through engaging and interactive activities. According to Gentry (2000), meaningful and repeated exposure to phonetic activities enhances learners' spelling mastery and literacy skills.

Table 3 presents the test of difference in the spelling proficiency of Grade 2 learners before and after the implementation of game-based learning. The results showed that the post-test mean score (8.35) was higher than the pre-test mean score (5.10), indicating improvement in learners' spelling proficiency after the intervention. The computed t-value of 18.72 and p-value of 0.000 led to the rejection of the null hypothesis, showing a significant difference between the pre-test and post-test results.

The findings imply that game-based learning was effective in improving the spelling proficiency of Grade 2 learners. The use of enjoyable and interactive activities enhanced learners' motivation, participation, and retention of spelling concepts. According to Gee (2003), game-based learning environments promote active engagement and meaningful learning experiences that improve learners' academic performance. Likewise, Piaget (1964) emphasized that children learn more effectively through active participation and interactive activities.

Table 4 shows the relationship between learners' engagement in game-based learning and their spelling proficiency. The computed r-value of 0.68 indicates a moderate positive relationship, while the p-value of 0.000 shows that the relationship is significant. This led to the rejection of the null hypothesis.

The findings suggest that higher learner engagement in game-based activities is associated with better spelling proficiency. Learners who actively participated and enjoyed the games tended to perform better in spelling tasks. This supports the idea that engagement plays an important role in improving academic achievement. According to Fredricks et al. (2004), learner engagement positively influences academic performance, motivation, and classroom participation. Similarly, Vygotsky (1978) emphasized that active social interaction and participation contribute to effective learning and cognitive development.

Table 5 presents the level of learners' engagement in game-based learning activities, with an overall average weighted mean of 4.34, interpreted as "Very High." The highest-rated indicators were looking forward to spelling games in English class (4.50), feeling excited during spelling games (4.48), and enjoying spelling games (4.45). These findings indicate that learners were highly motivated, active, and interested during game-based learning activities.

The results imply that game-based learning created an enjoyable and interactive learning environment that increased learners' participation, confidence, and attention during spelling lessons. This supports the view that enjoyable learning experiences improve motivation and engagement among young learners. Deci and Ryan (2000) explained that

enjoyable and meaningful learning experiences increase intrinsic motivation and learner participation in classroom activities.

Table 6 presents the challenges encountered by teachers in the implementation of game-based learning in teaching spelling. The overall average weighted mean of 3.56 was interpreted as “Strongly Agree,” indicating that teachers experienced several difficulties in implementing game-based learning activities. The highest-rated challenge was the preparation of game materials being time-consuming (3.85), followed by large class size (3.80) and classroom management during games (3.75).

Other challenges included limited instructional materials, lack of training, and limited time for conducting game-based activities. The findings suggest that while game-based learning is effective in improving learners’ spelling proficiency and engagement, teachers still face practical and instructional challenges in its implementation. These results highlight the need for adequate resources, training, and support for teachers to effectively use game-based learning strategies in the classroom. According to Ertmer (1999), insufficient resources, limited teacher preparation, and classroom management concerns are among the common barriers to the effective implementation of innovative teaching strategies.

Conclusions

Based on the findings of the study, it was concluded that Grade 2 learners initially demonstrated an average level of spelling proficiency, showing that their foundational spelling skills were still developing. Learners experienced difficulties with more complex word patterns such as digraphs, vowel combinations, and irregular spellings, indicating the need for more engaging and structured instructional approaches.

The study further concluded that the implementation of game-based learning significantly improved learners’ spelling proficiency from an average level to a high level. Through interactive and enjoyable activities, learners were able to better understand and retain spelling patterns, resulting in improved performance in both simple and complex words. The significant increase in post-test scores confirmed that the improvement was largely influenced by the intervention, proving that game-based learning is an effective strategy for enhancing spelling skills among Grade 2 learners.

In addition, the findings revealed that learner engagement had a moderate to strong positive relationship with spelling proficiency. Learners who actively participated and showed enjoyment and motivation during activities tended to perform better in spelling tasks. The study also found that learners demonstrated a very high level of engagement throughout the intervention, showing enthusiasm and positive attitudes toward the activities. This suggests that game-based learning creates a more meaningful, learner-centered, and motivating classroom experience.

Lastly, the study concluded that although game-based learning is highly effective in improving spelling proficiency and learner engagement, its implementation is still affected

by challenges such as limited instructional materials, insufficient teacher training, time constraints, and classroom management difficulties. Despite these challenges, teachers still viewed game-based learning as a valuable instructional strategy that can enhance learner participation and academic achievement when properly supported.

Recommendations

Based on the conclusions of the study, it is recommended that teachers strengthen foundational spelling instruction through systematic phonics-based approaches, multisensory activities, and regular spelling exercises that develop learners' phonological awareness and understanding of spelling patterns. Teachers are encouraged to use visual aids, manipulatives, and contextualized vocabulary activities, while early intervention strategies should be implemented to address spelling difficulties at an early stage.

Game-based learning should also be continuously integrated into English instruction as a regular teaching strategy to sustain and further improve learners' spelling proficiency. Teachers may design progressive and engaging activities that gradually increase in difficulty, while reinforcement and review activities can help improve retention of spelling patterns. Schools are likewise encouraged to incorporate game-based learning into the English curriculum to promote interactive and meaningful learning experiences.

Considering the significant improvement in learners' spelling performance, school administrators and curriculum planners should support the use of evidence-based instructional approaches such as game-based learning across early grade levels. Teachers should be provided with instructional guides, learning resources, and continuous monitoring to ensure effective implementation and sustained learner improvement. Future researchers may also explore the long-term effects of game-based learning on literacy and language development.

Finally, to address the challenges encountered in implementing game-based learning, school administrators and educational stakeholders should provide stronger support systems for teachers. This includes regular training, adequate instructional materials, sufficient preparation time, and assistance in classroom management during interactive activities. Adjustments in lesson planning and time allocation should also be considered to ensure the effective and sustainable implementation of game-based learning in the classroom.

Compliance with Ethical Standards

The conduct of the study observed strict ethical standards to ensure the protection and welfare of all participants. Prior to data collection, permission to conduct the study was obtained from the Schools Division Office of Nueva Ecija and from the school heads of the participating schools in Cuyapo East District. Informed consent was secured from the teachers involved, and assent procedures were observed for Grade 2 learners with the approval of their parents or guardians. Participation in the study was entirely voluntary,

and respondents were assured that they could withdraw at any time without any consequences.

The confidentiality and anonymity of all participants were strictly maintained. All data gathered were used solely for academic purposes and were kept confidential throughout the duration of the study. No personal information was disclosed in any part of the research output. Moreover, the study ensured that no harm or discomfort was caused to the learners during the conduct of the activities. Game-based learning activities were designed to be safe, child-friendly, and aligned with the learners' developmental level.

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